MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2015/2016

BFN3154 – ADVANCED TOPICS IN FINANCE

(All sections / Groups)

8th MARCH 2016
9.00 a.m – 11.00 a.m
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of **SEVEN (7)** printed pages with **TWO (2)** sections.
2. Answer **ALL** questions in Section A and B. Marks are shown at the end of each question.
3. Please write your answers for Section A and B in the answer booklet

SECTION A (40 marks): Answer ALL questions. Choose the best answer. Each question carries 2 marks

1. Investigators have tested the strong form Efficient Market Hypothesis by examining the performance of the following type of investor:
a. Corporate insiders.
b. Stock exchange specialists.
c. Security analysts.
d. Professional money managers.
e. All of the above.

2. According to the strong-form efficient market hypothesis, stock prices fully reflect
a. All security market information only.
b. All public information only.
c. All public and private information only.
d. All of the above.
e. None of the above.

3. All of the following are underlying assumptions of the capital asset pricing model (CAPM) **except**:
a. A large number of profit-maximizing participants analyze and value securities.
b. New information enters the market in a random fashion
c. Security prices adjust rapidly to reflect the effect of new information
d. Expected returns implicit in the current price of the security reflect its risk
e. All of the above are assumptions of the CAPM

4. In a two stock portfolio, if the correlation coefficient between two stocks were to decrease over time, everything else remaining constant, the portfolio's risk would
a. Decrease.
b. Remain constant.
c. Increase.
d. Fluctuate positively and negatively.
e. Be a negative value.

5. The Markowitz model is based on several assumptions regarding investor behavior. Which of the following is not such any assumption?
a. Investors consider each investment alternative as being represented by a probability distribution of expected returns over some holding period.
b. Investors maximize one-period expected utility.
c. Investors estimate the risk of the portfolio on the basis of the variability of expected returns.
d. Investors base decisions solely on expected return and risk.
e. None of the above (that is, all are assumptions of the Markowitz model)

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6. A positive covariance between two variables indicates that
a. the two variables move in different directions.
b. the two variables move in the same direction.
c. the two variables are low risk.
d. the two variables are high risk.
e. the two variables are risk free.

7. Which of the following statements about the risk-free asset is correct?
a. The risk-free asset is defined as an asset for which there is uncertainty regarding the expected rate of return.
b. The standard deviation of return for the risk-free asset is equal to zero.
c. The standard deviation of return for the risk-free asset cannot be zero, since division by zero is undefined.
d. Choices a and b.
e. Choices a and c.

8. What does Weight of Risk Free (W_{RF}) = -0.50 mean?
a. The investor can borrow money at the risk-free rate.
b. The investor can lend money at the current market rate.
c. The investor can borrow money at the current market rate.
d. The investor can borrow money at the prime rate of interest.
e. The investor can lend money at the prime rate of interest.

9. When identifying undervalued and overvalued assets, which of the following statements is false?
a. An asset is properly valued if its estimated rate of return is equal to its required rate of return.
b. An asset is considered overvalued if its estimated rate of return is below its required rate of return.
c. An asset is considered undervalued if its estimated rate of return is above its required rate of return.
d. An asset is considered overvalued if its required rate of return is below its estimated rate of return.
e. None of the above (that is, all are true statements)

10. Unlike the capital asset pricing model, the arbitrage pricing theory requires only the following assumption(s):
a. A quadratric utility function.
b. Normally distributed returns.
c. The stochastic process generating asset returns can be represented by a factor model.
d. A mean-variance efficient market portfolio consisting of all risky assets.
e. All of the above

Continued...

11. In a macro-economic based risk factor model the following factor would be one of many appropriate factors:
a. Confidence risk.
b. Maturity risk.
c. Expected inflation risk.
d. Call risk.
e. Return difference between small capitalization and large capitalization stocks.

12. Fama and French suggest a three factor model approach. Which of the following is **not** included in their approach?
a. Excess returns to a broad market index
b. Return differences between small-cap and large-cap portfolios
c. Return differences between industry characteristics
d. Return differences between value and growth stocks
e. Both c and d

13. With a continuous probability distribution,:
a. a probability is assigned to each possible outcome.
b. possible outcomes are constantly changing.
c. an infinite number of possible outcomes exist.
d. there is no variance.
e. All of the above

14. The expected value is the:
a. inverse of the standard deviation
b. correlation between a security's risk and return.
c. weighted average of all possible outcomes.
d. same as the discrete probability distribution.
e. All of the above

15. ----------is concerned with the interrelationships between security returns as well as the expected returns and variances of those returns.
a. random diversification.
b. correlating diversification
c. Friedman diversification
d. Markowitz diversification
e. All of the above

16. Which of the following would be considered a random variable:
a. expected value.
b. correlation coefficient between two assets
c. one-period rate of return for an asset.
d. beta.
e. All of the above

Continued...

17. Given the following probability distribution, calculate the expected return of security XYZ.

Security XYZ's Potential return	Probability
20%	0.3
30%	0.2
-40%	0.1
50%	0.1
10%	0.3

a. 16 percent
b. 22 percent
c. 25 percent
d. 18 percent
e. 17 percent

18. In a multifactor model, confidence risk represents
a. Unanticipated changes in the level of overall business activity.
b. Unanticipated changes in investors' desired time to receive payouts.
c. Unanticipated changes in short term and long term inflation rates.
d. Unanticipated changes in the willingness of investors to take on investment risk.
e. None of the above.

19. In a multifactor model, time horizon risk represents
a. Unanticipated changes in the level of overall business activity.
b. Unanticipated changes in investors' desired time to receive payouts.
c. Unanticipated changes in short term and long term inflation rates.
d. Unanticipated changes in the willingness of investors to take on investment risk.
e. None of the above.

20. Fama and French suggest a three factor model approach. Which of the following is **not** included in their approach?
a. Excess returns to a broad market index
b. Return differences between small-cap and large-cap portfolios
c. Return differences between industry characteristics
d. Return differences between value and growth stocks
e. Both c and d

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SECTION B (60 marks). Answer ALL questions

Question 1

a) The followings are the monthly returns of A Corporation and B Corporation during a six month period.

Month	A (Ri)	B (Rj)
1	0.11	0.25
2	0.2	0.08
3	-0.5	0.1
4	0.08	0.11
5	0.34	-0.06
6	0.05	0.02

i) Average monthly rate of return for each stock

(3 marks)

ii) Standard deviations of returns for each stock

(3 marks)

iii) Covariance between the rates of return

(3 marks)

iv)The correlation coefficient between the rates of return

(3 marks)

b) As the new fund manager in O-Securities, you are concerned with the level of risks of both of the stocks invested by O-securities. As the manager you are required to calculate the correlation coefficient of the stocks and the portfolio standard deviation, if the covariance of the stocks is 0.009, the standard deviation of the first stock is 15% and the standard deviation of the second stock is 20%?

(8 marks)

(Total: 20 marks)

Question 2

a) As an analyst for hedge fund company, you are required to understand the differences between Capital Asset Pricing Model (CAPM) and Arbitrage Pricing Theory (APT). Explain what the CAPM and APT attempt to model and discus the difference between these two asset pricing model.

(10 marks)

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b) Consider the following information regarding the Fama French Carhart (FFC) four factor model:

Factor Portfolio	Average Monthly Return (%)	Harta Factor Betas	Top Factor Betas	Supermax Factor Betas
$R_m - rf$	0.64	0.712	0.937	0.782
SMB	0.17	-0.103	-0.214	0.224
HML	0.53	0.124	0.154	0.123
PR1 YR	0.76	0.276	-0.147	0.247

Using the Fama French Carhart (FFC) four factor model and the historical average monthly returns, calculate the expected monthly return for Harta, Top and Supermax?
(10 marks)

(Total: 20 marks)

Question 3

a) As a finance student, the model you need to analyze is as follows:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$

Where y= shares return $(P_1 - P_0 / P_0)$

X_1=Inflation rates

X_2= Growth in Gross National Product (GNP)

X_3=Changes in interest rates.

Discuss the result of the regression outputs and the relationship between shares return, inflation rates, growth in Gross National Product (GNP) and changes in interest rates.

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SUMMARY OUTPUT					
Regression statistics					
Multiple R	0.6808				
R Square	0.4635				
Adjusted R square	0.4446				
Standard error	0.788				
Observation	89				
ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	3	45.60	15.20	24.48	0.0000
Residuals	85	52.77	0.62		
Total	88	98.37			
	Coeffcients	*Standard Error*	*t stat*	*P-value*	
Intercept	0.466	1.510	0.310	0.758	
Inflation rates	0.063	0.120	0.520	0.602	
Growth in GNP	0.011	0.001	8.160	0.000	
Changes in interest rates.	0.093	0.031	3.000	0.004	

(10 marks)

(Total: 20 marks)

b)

i) Discuss the appropriateness of using multiple regressions in research.

(5 marks)

ii) Discuss the effects of outliers on the regression results.

(5 marks)

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